



# Site Visit Report and Recommendations Related to Sagging Floor

Jonathan Fisher House  
Blue Hill, ME

August 29, 2019

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## Introduction

On Monday July 24, 2019, Scott Hanson, Director of Preservation Consulting Services for Sutherland Conservation & Consulting in Hallowell, ME, conducted a thorough walk-thru visual inspection of the Jonathan Fisher House with Brad Emerson and George Siekkinen, members of the Board of the Jonathan Fisher Memorial organization. No interior or exterior finishes were damaged or disassembled for this inspection. Prior to inspecting the building, Hanson reviewed documentation of work done in the 1990's and studied A.L. Cummings 1966 article on the house.

The National Register listed Jonathan Fisher House in Blue Hill, Maine, is an 1814 house with an 1896 ell (replacing Fisher's original house of 1797) and a modern addition to the ell. Fisher served as his own architect for the 1814 house and his drawings and diary entries detailing the design and construction of the house remain with it. The house is significant both as the work of a self-taught architect that possesses unusual architectural features and as a relatively modest house of the period with a level of documentation of its construction more often found for mansions of the wealthy. Also contributing to the significance of the house is its relatively intact state, having remained in the Fisher family through several generations before passing to a non-profit organization to be operated as a museum house in the 1950's. Rather than modernizing the 1814 house, third-generation Fishers of the late 19th century removed the 1797 ell and replaced it with a two-story ell containing a modern kitchen and other living spaces that allowed the remaining historic part of the house to remain mostly unaltered. Reportedly, the house remained vacant from 1918 until the 1950's, with only rare visits from members of the Fisher family who lived out of state.

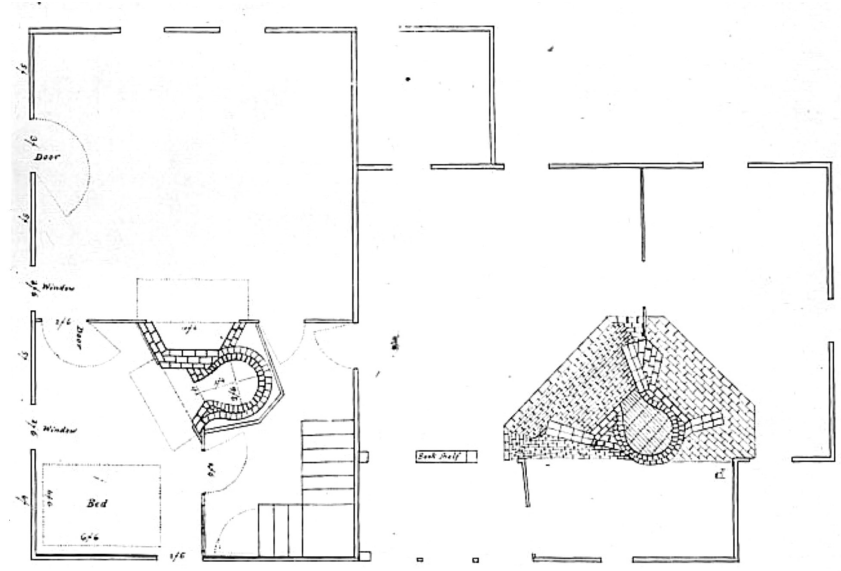


FIG. 2. FIRST (?) PRELIMINARY DRAWING BY JONATHAN FISHER FOR THE PLANNED ADDITION TO THE HOUSE BY JOHN WILSON CRANE - 1814

This early draft plan for Jonathan Fisher’s new 1814 house (at left) is the only known depiction of the plan for the 1796 house (right). This plan does not show a door between the parlor and original house, but the final plan does. From Abbott Lowell Cummings article, 1966.

## Original Conditions

### The Buttery/Cheese Room

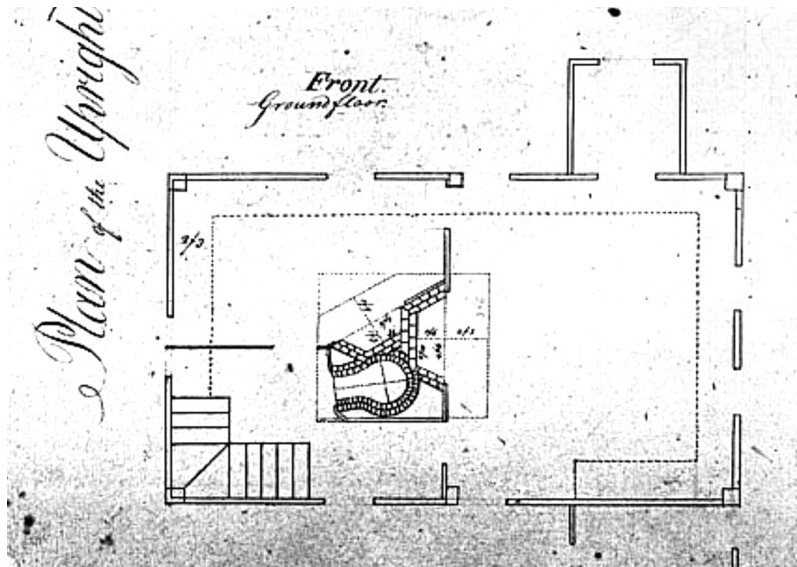
From 1814 until 1896, the ell intersecting the “new” house in the vicinity of the damaged area was one story, as was the buttery that filled the corner where they intersected. It seems likely the buttery would have had a low-slope shed or hipped roof, as can be seen to some degree in Fisher’s 1824 painting “A Morning View of Blue Hill Village,” which depicts his own house in the distance. Water flowing from the ell roof and the main roof of the 1814 house would have landed on the buttery roof, likely with splashing onto the siding just above the beam that is the primary subject of this report. Abbot Lowell Cummings notes in his 1966 article on the construction of the house that there is clear documentation in Jonathan Fisher’s diary that the house was built without gutters – which would have prevented this problem. The northeast orientation of the buttery makes it likely snow buildup on the roof would have been significant at times, possibly causing more water infiltration into the wall above the beam. An 1888 photo of the house shows metal gutters had been added to the west and south elevations by that point. It isn’t clear whether the gutter extended onto the north elevation and the east elevation is not visible at all.

Given the placement of a window in the ell where the buttery stood, it seems likely the buttery was removed with the 1797 building when the two-story ell was constructed in 1896. This window matches the others in the ell closely and there is no reason to think it might be a latter alteration. The removal of the buttery would have eliminated the splashing of water from the 1814 roof onto the wall above the beam, but water flowing off the now higher ell roof began to soak the wall above and below the beam regularly – as it still does. This flow is made up of water flowing down the valley between the ell and 1814 roof, capturing water from a good part of the main roof as well as the ell roof.

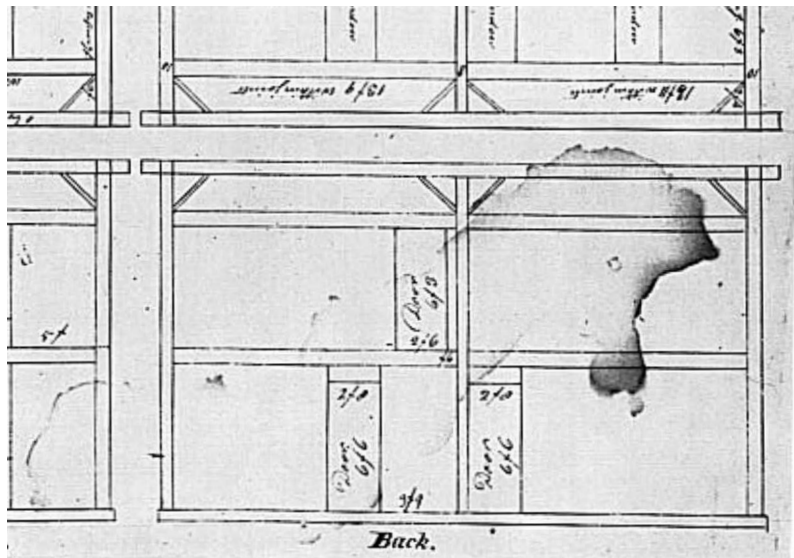
## The Missing Door

The original floor and framing plans reproduced in Abbot Lowell Cummings 1966 article clearly show that a door between the parlor and ell, which appears to have been removed during the 1950's restoration, was an original feature. This area appears in photos taken during the repairs to the beam in 1993 and clearly shows the door opening with modern in-fill. The paneled wainscot is modern material and the wall is skim coat plaster on blue board in this area.

It is possible this was an original exterior door to the 1797 Fisher House, retained as a door connecting the new parlor to the existing kitchen. Such a door would have faced the road from the original house. The nearby door from the original building into the stair hall of the new building, which retains a six panel door matching the others in the 1814 building, would have been added to provide access to the bedroom and stairs without passing through the parlor. A pre-existing door in the location of now hidden parlor door opening would explain why Fisher's 1814 plan had two doors in close proximity when a single door into the new stair hall would have served the purpose as well



Jonathan Fisher's final plan for his new house, 1814. The door from the parlor into the existing house is clearly visible (right of center near bottom) and corresponds with the wall framing plan below. From Abbott Lowell Cummings article, 1966.



This framing plan for the back wall, drawn by Jonathan Fisher in 1814, clearly shows the two door openings from the new building into the existing house, which became an ell to the new structure. From Abbott Lowell Cummings article, 1966.

## Past Repairs and Investigations

### Exterior Wall

It appears the clapboards on the exterior wall in the vicinity of the current area of concern have all, or nearly all, been replaced at some point during or since the 1950's restoration.

## Interior Floor and Beam

The house was restored as a museum in the 1950's and has been maintained as such since that time, periodically receiving additional restoration work to address structural issues. Several decades ago, a two-story addition was built on the south end of the 1896 ell for additional exhibit space. A substantial structural repair was undertaken with epoxy consolidants and filler on a beam in the chamber over the parlor in 1993. This work required removal of the trim elements enclosing that beam and the bottom board covering the girt beam it intersected. Flooring was removed on the second floor in the immediate area of the repair to provide access to the top of the beams. Below the repair, in the parlor, restoration finishes were removed from the wall against the ell, exposing the covered-over original door opening filled with modern framing material and covered on both sides with modern skim coat plaster on gypsum board. Additional structural work was undertaken in the 1990's in the attic and basement. All of the 1990's work was well documented in photographs which remain in the

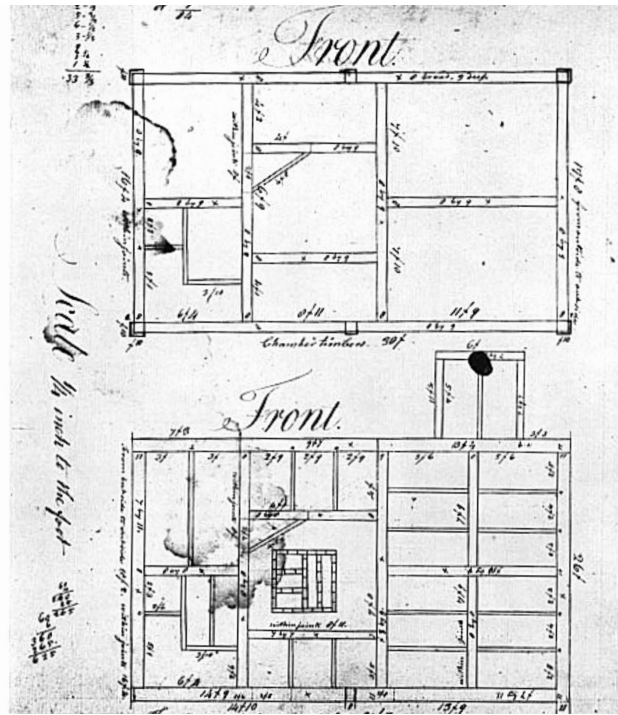


FIG. 5. DRAWING BY JONATHAN FISHER FOR THE FRAMING OF FIRST AND SECOND FLOORS OF THE PLANNED ADDITION TO HIS HOUSE IN BLUE HILL, MAINE, 1814

Jonathan Fisher's 1814 framing plan for his new house. The girt indicated is where the sagging is happening, likely from rot in the top of this beam. From Abbott Lowell Cummings article, 1966.



C. 1888 photo of the Jonathan Fisher House and out-buildings with descendants of Fisher posed by the road. Courtesy of the Jonathan Fisher Memorial Foundation.

house and were studied for this report.

### Water management

It should be noted that a condition monitoring report on the house by Elliot and Elliot Architecture, dated December 7, 1994, recommends that poor drainage around the house be addressed as soon as possible to protect against excessive moisture in the building. Moisture is a prerequisite for wood-boring insects and rot. This concern has not been addressed and the problem has clearly worsened in the 25 years since the report was written.



Detail from the c. 1888 photo of the Jonathan Fisher House, showing the metal gutters then installed at the eaves of the house. Courtesy of the Jonathan Fisher Memorial Foundation.

## Current Conditions

### Exterior Wall

The exterior wall in the corner where the buttery originally stood shows evidence of current and past water damage to the siding on the back of the 1814 building in the vicinity of the sagging second story floor visible in the interior. All of the clapboards on this wall appear to have been replaced at least once, with evidence of a more recent round of partial replacement. As mentioned above, this wall is regularly wet by rainwater and snow melt coming off the ell roof. The northeast orientation of the wall provides little opportunity for the sun to dry the wall. The projection and height of the 1990s addition to the ell further shelters this area from sun and air movement, contributing the on-going wet conditions. The gutters now lying on the ground below this corner were apparently installed to address this issue, possibly during the last round or repair work in 1993. It is likely the gutters failed as a result of the weight of ice in winter – not surprising for gutter in a northeast-facing location that is not equipped with a heat cable to prevent ice buildup.

### Interior Floor

The condition that precipitated this report is an area of obvious sagging in the second story floor of the chamber over the parlor, in the vicinity of the door to the stair hall. This is immediately adjacent to the area where epoxy repairs were made to a beam to address damage from powder post beetles in 1993. Based on surface conditions, that repair work appears to have been effective and there is no evidence of additional deterioration in that beam since the repairs. The current area of concern is in the girt beam, which intersects the previously repaired beam and continues toward the area where the exterior wall has a long history of conditions likely to result in water infiltration through the siding and sheathing.

It is evident that some degree of floor sagging along the wall was existing at the time of the previous beam repairs, as a piece of pine was scribed to match the sag and scabbed onto the bottom of the

historic base board. Assuming that scribe matching the degree of sag at that time (a reasonable assumption given the general quality of the work done at that time), the floor has sagged approximately 1 ½” since those repairs were made. Brad Emerson reports that the sag has increased noticeably in the past several years, suggesting an on-going and possibly accelerating condition of deterioration in the girt beam.



FIG. 10. JONATHAN FISHER HOUSE, BLUE HILL, MAINE, 1814  
Photo by Ward Snow, 1955.

The visible sagging is confined to a single structural bay of

the floor in one room and there is no corresponding deflection of surfaces in the room below. This suggests the top surface of the girt beam, which the floor boards are attached to, is subsiding in this bay. The only movement visible in the work done in 1993 is a single screw through a floor board into the subsiding beam. This screw has moved upward enough to dislodge the wood plug glued on top of it to hide it. It should be noted that this bay has the most active loading in the room, being on the path from the door for anyone walking into the room, bypassing the fireplace hearth. A heavy antique dresser sits on this section of floor against the wall. The next structural bay of the floor is covered by a bed and receives virtually no live loading. The remaining bay is on the far side of the bed, where it likely also gets little to no live loading.

This photo of the Jonathan Fisher House was taken in around the time it was restored in 1955. Courtesy of the Jonathan Fisher Memorial Foundation.

## Conclusions and Recommendations

### Conclusions: Floor

The current sagging floor condition in the chamber over the parlor is likely due to rot in the top of the girt beam in the rear wall of the 1814 building. The floorboards rest on this beam under the baseboard. In the 1990's, the bottom side of this beam was fully exposed but only the top portion in the immediate vicinity of the deteriorated intersecting beam was exposed by removal of flooring. As described above in this report, there is reason to suspect this beam has been subject to regular wetting through the siding above it since it was built. Previous investigations have documented powder post beetle infestation in framing members adjacent to the area in question, which was the focus of the last round of significant structural repair to the house. Wet conditions and the known presence of wood-eating insects in the past make it very likely this is the cause of the current sagging of the floor in the bedroom above the parlor. Without efforts to repair the damage and to stop the water infiltration into the wall from the exterior, the sagging will get worse and the insect damage will spread. If left unresolved, the deterioration will eventually make the bedroom floor unsafe and cause damage to the parlor ceiling.

### Conclusion: Missing Door

Although not part of the requested scope of this report, it was noticed while doing the research for it that the door opening between the parlor and ell, now hidden with “restoration” plaster and wainscot, is in fact an original feature of Jonathan Fisher’s plan for the house and may have been the original street-facing entrance to the 1797 house. Brad Emerson reports that several doors that appear to have been part of the 1797 house survive as artifacts in the organization’s collections.

### Recommendations: Floor

It is essential that any active insect infestation and conditions that contribute to it be resolved and the structural damage repaired to allow continued access to the bedroom for visitors to the house. As part of this work, it is critical that an effective long-term solution be found to prevent the soaking of the east wall of the 1814 house by water coming off the roof of the ell.

Although the area of deterioration that is currently apparent is limited to a single structural bay of the floor, it is recommended that the girt beam be inspected and its condition assessed all the way to the post at the northeast corner of the house. This will require removal of all furniture from the room and the temporary lifting of the entire floor. Inspection of the beam should include test borings for the presence of insect damage all the way to the corner. Power post beetles consume a timber from the center out, often leaving the exterior surfaces completely intact, making it impossible to tell whether damage has occurred without boring into the wood.

Once the extent of the damage is determined, appropriate repairs should be made by a qualified contractor following the Secretary of the Interior’s Standards for Restoration. It may be necessary to involve a structural engineer experienced in historic timber frame buildings to work with the contractor in designing an appropriate approach to repair, including any temporary shoring needed to support the floor during repairs.

This work might be undertaken by a local contractor under the supervision of a preservation consultant and a structural engineer experienced in work on buildings of the period of the Fisher House, or by a contractor with specialized expertise in 18th and 19th century timber frame construction and current historic preservation practices. Such a specialist contractor may have the expertise to undertake appropriate repairs without the need for a structural engineer, will know whether the work requires an engineered solution once the area is fully exposed and assessed, and will be able to recommend an engineer they have worked with successfully in the past. In either case, an engineer should be consulted about a permanent diverter and/or gutter solution to prevent water from soaking the rear wall of the 1814 building in the future.

Given the long history of issues in this area of the building, it is strongly recommended that any solution encompass the entirety of the problem in a long-lasting way.

Given the long history of moisture-related structural issues in this area of the building, it is strongly recommended that any solution encompass the entirety of the problem in a long-lasting way and in conjunction with a comprehensive water management strategy for the building, as has been recommended in various reports going back to the 1990’s. In planning for improvements to drainage around the building involving changes to the grade of the soil, the probability of there being



archeological resources dating the period of significance must be considered. This is particularly likely in the vicinity of the original kitchen (in the ell) on both sides of the building.

#### Recommendations: Missing Door

Since the restoration wall finishes below the area of the sagging floor may have to be removed once again to access the beam above, exposing the infilled door opening, consideration should be given to reestablishing this missing original feature of the room at least on the parlor side. This would be particularly appropriate if one of the surviving 18th century doors from Fisher House fits the opening and may have originally been used in it. Given the current use of the adjoining space in the 1896 ell, it would probably make sense to install a non-functioning door with appropriate trim visible on the parlor side of the wall but not on the ell side.



1990's views of the north and east elevations of the Fisher House showing exterior wall conditions at the time the last round of interior structural work was undertaken. Courtesy Jonathan Fisher Memorial Foundation.

Workman removing trim boards to expose beams during 1990's structural repair work.



Workman removing trim boards to expose beams during 1990's structural repair work. Note areas of rot visible near juncture of beams. The beam currently in question is that at left.

Exposed beams during 1990's structural repair work. Note that the girt at left is exposed on the bottom but not on the side. Only a small area of the top was exposed as well.





This 1990's view shows that only the bottoms of most of the beams were exposed, making it impossible to detect deterioration in the tops of the beams unless it extended all the way to the bottom.



This 1990's view in the parlor shows the original door opening into the ell exposed.

Current view of the northeast corner where the ell and house meet, not deteriorated paint on the 1814 house from water cascading off the ell roof. SCC, July 2019.





Current conditions in the northeast corner where the 1814 house (yellow) is joined by the 1896 ell (red). The buttery/cheese room built in 1814 stood where the wood platform is located. Note the fallen gutter, which was installed on the roof of the ell at some point after 1993. SCC, July 2019.



Detail view of the valley where the roofs of the two sections of the house meet. Water flowing down this valley and from the ell roof contribute significantly to the water issues on the rear wall of the 1814 house (yellow wall). A gutter previously installed here to mitigate the issue has fallen to the ground. SCC, July 2019.



Detail view of failing paint and caulking and warping clapboard on the east (rear) wall of the 1814 house, near area with sagging floor. These conditions indicate prolonged exposure to excessive water, including moisture within the wall cavity. SCC, July 2019.

Detail view of failing paint and caulking and paint on the east (rear) wall of the 1814 house, near area with sagging floor. These conditions indicate prolonged exposure to excessive water, including moisture within the wall cavity. SCC, July 2019.



Current view in parlor of the area below the sagging floor. Wainscot and plaster adjacent to the door at right was installed to cover original door opening, apparently during 1950's restoration. SCC, July 2019.



View of the sagging floor in the chamber over the parlor. The level yellow line has been added to help illustrate the extent of the sag. The location of the 1993 beam repair is at far right in the photo. Note that the baseboard was scribed to follow a sag that existed in 1993 and has now increased noticeably. SCC, July 2019.

Close up view of the sag showing a small area of daylight in from the first floor of the ell. Note added piece at bottom of base board that was scribed to the sag as it existed in 1993. It has dropped more than an inch since that time. SCC, July 2019.



Another view of the sagging floor and previously altered baseboard. Note wood plugs in floorboard in foreground, which cover screws installed after the 1993 repairs. SCC, July 2019.